Competitive Advantage: Exploring the Role of Partnership with Suppliers, Customer Relationship and Information Sharing as Antecedents

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Abstract- **The objective of the present research is to explore the impact of information sharing, supplier partnership and customer relationship with a competitive advantage in the Indonesian rubber industry. Moreover, current study also explored the mediating role of flexibility of the supply chain among of information sharing, supplier partnership and customer relationship and competitive advantage. Moreover, of information sharing, supplier partnership and customer relationship are studied as the independent variables in the present study. Survey based approach was adopted for the collection of data whereas SEM-PLS was used for the analysis of the data. The findings of the study pointed out that customer relationship and supplier partnership have significant impact on the flexibility of the supply chain and to develop competitive advantage. Moreover, the results of the study do not support the relationship of information sharing with flexibility and competitive advantage. The findings of the present study are beneficial for the policy makers of the Indonesian rubber industry. By the findings of the study, they can adopt different strategies to develop a competitive advantage. The present study will increase the past literature of the supply chain.**

Keywords: *Information sharing, customer relationships, partnership with suppliers, supply chain flexibility, competitive advantage.*

1. Introduction

The market is becoming global since last two decades because the market is becoming more competitive with the passage of time. customers are more focused towards getting the service or product at the given time at the mentioned place at the minimum cost. Due to this customer demands, organizations have started to realize that they need to improve their internal efficiencies and they must make their supply chain more competitive. In order for the organization to be more competitive, organizations must focus on their supply chain practices [2]. The practices of the supply chain are important to increase profitability and remain competitive. Basically, supply chain is the network that is complex and consist of consumers, retailers, distributor, manufacturers and suppliers. All of these have to work together so they can convert raw material to the finished product [1].

Currently, the business market is very competitive. As mentioned above customers are getting more sophisticated and demanding products that are customized in short period of time. The reliance of most of the organizations is on the minimum cost while placing order. This they can achieve by adopting flexibility so they can compete in the market [3]. In order to fulfil the demands of the customers, organizations have understood the criticality if flexibility. The flexibility of the organization is so critical that it has gained the strategic importance of the organization [4].

Moreover, the supply chain of the organization is impacted by the exchange of information among the partners. The sharing of information is very important, so the activities of the supply chain are facilitated, and organization can adopt flexibility. Once the organization is able to gain flexibility through the information sharing of the partners, organizations can produce the products in short time which will impact the capability to be competitor [5].

Moreover, customer relationship is also critical in order to understand the market is very important. Under the customer relationship, organizations have to develop and maintain good relationships with the customers. Once there exists a good relationship with the customers, the organizations can develop flexibility because they can better understand the need of the customers [6]. Thus, through flexibility, these needs can be fulfilled by producing different products in short time.

Moreover, in a complex business environment, partnership among the suppliers is also very important as well. This partnership can be between the raw material suppliers, to vendors, distributors and customers. The organizations having partnership relationship with raw material supplier have access to the raw material anytime. Moreover, the organizations are can get competitive advantage due to partnership with the other suppliers [7].

The rubber industry in Indonesia is very dynamic. It is progressing very well since last few years, and it has potential as well to grow. The major export of Indonesia is tyred, which is a rubber product. Every year more than 50 million tyres are exported from Indonesia. Major

exporting region of Indonesian tyre is middle east and America. The expected rate of growth in this sector for next 5 years is around 13%. Asia as more than 90% of the rubber. According to the available statistics, Indonesia is third largest producer of rubber after Vietnam and Thailand. All these statistics show that the firms dealing in this sector should show flexibility in their supply chain to develop competitive advantage [8].

Therefore, the main objective of the present study is to examine the impact of customer relationships, supplier partnerships and information sharing among the supply chain partners to develop competitive advantage through flexibility among the rubber industry firms of Indonesia.

2. Literature Review

2.1 Competitive Advantage

In past literature, academicians have used the terms competitive advantage on most of the occasions. They have most of the times used the terms performance and competitive advantage interchangeable. [9] mentioned that the competitive advantage gained by the organizations is very different from the performance of the organization. researchers have conceptualized competitive advantage as the strategy adopted by the organization which is not adopted by the competitors yet. Competitive advantage plays important role in reducing the cost of the organization in terms of producing a product, minimizing the threat of the competitors, maximize the opportunities of the marker [37].

Researchers have mentioned that the organization can develop economic value through the attainment of competitive advantage. It is because competitive advantage is the difference among benefits of the resources and economic cost. This is the difference that a firm poses than its competitor [36]. Researchers further mentioned that organizations are able to get financial value by producing goods that have more benefits than competitors. Moreover, the cost of producing these goods are also less than competitors. As the benefits enjoyed by the customers are superior, with the price payed to the firm is also less, the organizations are able to retain the customers which are the source of improved performance of the organization. Due to the less cost of production, organizations are able to sell more units of the goods or services being produced thus increasing the revenue of the organization [10].

As mentioned above, the ability of the organization to develop a defensive position as compare to its competitor is called competitive advantage. Competitive advantage is based upon the capabilities upon which the organization can differentiate it-self from the firms known as its competitors [38]. Among the capabilities of the firm known as competitive capabilities, flexibility, deliver, quality, cost and price are the important competitive capabilities. Moreover, organizations currently are facing competition on the basis of time in modern era as well [12]. Researchers have identified that time is the source that can play very important role in the development of competitive advantage. Researchers have generally discussed competitive advantage on the basis of five dimensions namely production innovation, dependable delivery, value provided to the customers, and pricing in terms of premium and competitive pricing. Nut in the present study, the construct of the competitive advantage is taken as the uni-dimension construct which describes the overall competitive advantage of the organization [11].

2.2 Customer Relationships

Researchers have observed that customer relationship strategies are employed by the organizations with the objective to improve the satisfaction of the customer, develop a relationship on the long run basis and to manage the complaints of the customers. [13] pointed out that among the practices of supply chain management, customer relationship is one of the most important ones. It's been revealed by the researchers that competitive advantage is gained by the organizations which have committed relationships with their customers. These relationships are the sustainable advantage on most of the occasions. For the organizations to survive in the market where customers are demanding personalized services and customization of products, relationship with customers has gained importance. Under the supply chain, it is critical for the organization to maintain good relationship with the customers so the supply chain programs can be implemented successfully, and value can be provided by the organizations to the customers [14].

2.3 Partnership with suppliers

Scholars have noted that the relationship between the supplier and buyer is very adversarial for the organizations. The organization can attain continuity of the supply, bargaining in the price and increased competition by engaging more suppliers. Such approach is appropriate in case where the product being produced is low value product. Partnership with the supplier is purposely and naturally strategic is nature and mostly deal with the top management of the organization. It is because the market is very complex, and resources of the firms are very limited [15].

When the firms are engaged in the partnership with each other, there is the element of relationship and cooperation among suppliers and firms which can be formed in a number of forms. There is two major perspectives under the literature on the basis of cooperative relationships. These broader perspectives are non-contractually and contractually based. Some organizations utilize the options of strategic alliances or joint ventures on the place of supply chain partnerships in which proper legal boundaries and structures are involved [16]. On the other

hand, there is no legal bounding or obligation under the supply chain partnership. Moreover, there is no involvement of the investment as well. Therefore, partnerships are defined by the researchers as the relationship which is based on the purpose among the organizations that are independent having mutual benefit, shared goals and have high level of independence mutually. Researchers have pointed out that there are a number of goals that cannot be achieved without partnerships [17].

Past literature has widely explored the characteristics of supply chain partnerships. Moreover, a number of models related to partnership development are proposed as well. In order motivate an organization to develop a partnership with the supplier, a number of studies are conducted. The motivation is tried to be created in order to use it as the competitive strategy, economic cost, and use the resources effectively. Whereas, moving ahead of the role of supplier and buyer relationship of the partnership, which is most of the times used as antecedents, it also influences the other factors of the business environment like competitive advantage and flexibility [18].

2.4 Information sharing with suppliers

Researchers in past literature has tried to discuss the way to utilize the IT advancement for the information sharing of the organization. this IT capability plays the role of the enabler for the coordination that is tight, so the performance of overall supply chain can be enhanced. Researchers have mentioned that information regarding the inventory is very important and key for the organization. on the other hand, scholars are also of the view that incentive sharing among the partners who share the information is the biggest hurdle in the information sharing process [35]. There is desire incentive sharing because the benefit which is gained by sharing the information is not possible to be shared [19]. Moreover, the processing of the organization related to the orders can be improved by the process of sharing information. Moreover, researchers have analytically mentioned that the organizations involved in the process of manufacturing can use their internal information to minimize the variance forecast, on the other hand, has proved analytically that there may not be much benefit of sharing the information especially when there is uncertainty at the demand level [20].

In the literature being discussed by the researchers in the present day, the issues related to sharing the information, the way to share the information, configuration of the supply chain are still the ague able issue. Despite all these issues in the topic of sharing the information, the literature regarding the information can easily be found. Studies mentioned that among the platforms where information can be shared, Internet is one of the important sources of information. This platform can be used by the partners of the supply chain to share the information. Researchers also studied the impact of demand and scheduling information impact of the manufacturing system at the global level. These researchers used linear programming to solve the issues related to programming [21]. The researchers concluded that cost which most of the organizations bear in the form of supply chain activity could be reduced. Moreover, researchers also employed different other techniques of mathematics to examine the impact of information sharing on the supply chain stock. All of them resulted in reduction of the stock of the organization. among most of the studies discussed the impact of information sharing on supply chain, mostly used mathematical models. Despite all this, it's been revealed that suppliers who share information with partners have the capability to be flexible so they can meet the needs of the customers. Moreover, sharing information can enable a firm to develop competitive advantage over the others [22].

2.5 Supply Chain Flexibility

There exists large literature regarding flexibility. Among the firms dealing with manufacturing of the products flexibility is defined in terms of uniformity, mobility and range. A number of researchers mention that a number of firms have the capability to produce from one product to another in a given timeline. This shows the flexibility of the organization can adopt.

Academicians have discussed flexibility in two streams, like strategic flexibility and manufacturing flexibility. The strategic flexibility of the organization shows the ability of the organization to manage political as well as economic risks by responding promptly to the opportunities and threats of the market [23]. On the other hand, the ability of the organization to produce different products actively is defined as manufacturing flexibility. Reliance on manufacturing flexibility is on the resources of the organization, whereas the reliance on the strategic flexibility on the manufacturing flexibility. Moreover, the reliance is on the different functions of the organization as well.

Therefore, manufacturing flexibility is a basic component of strategic flexibility. In the same way manufacturing flexibility is also the component of manufacturing flexibility. Keeping in view the supply chain of the organizations flexibility of the supply chain represents the internal supply chain or the organizations [25]. Which means flexibility of the supply chain shows the ability of the organization which minimize the lead time of the supply chain, providing variety of the products and ensure the capacity of the product. All these abilities of the organization are synergized naturally. The time of the product development is reduced due to product modularity through the reduction of complexity. Moreover, complexity of manufacturing is reduced as well due to

reduction of Leadtime of manufacturing [24]. The ability of organization to minimize the production mix directly impacts the procurement ability. As mentioned, that flexibility has positive impact on the competitive advantage, and it is critical for the organization for its survival.

2.6 Following hypothesis are developed on the basis of above-mentioned literature

H1: Supply chain flexibility has a significant impact on competitive advantage.
H2: Information sharing has a significant impact on competitive advantage.
H3: Customer relationships have significant impact on competitive advantage.
H4: Partnership with the supplier has significant impact on competitive advantage.
H5: Information sharing has a significant impact on Supply chain flexibility.
H6: Customer relationship has a significant impact on competitive advantage.
H7: Partnership with suppliers has a significant impact on competitive advantage.
H8: Supply chain flexibility mediates the relationship between information sharing and competitive advantage.
H9: Supply chain flexibility mediates the relationship between customer relationship and competitive advantage.
H10: Supply chain flexibility mediates the relationship of Partnership with suppliers and competitive advantage.

2.7 Research Framework

Based on the above-mentioned hypotheses, the below shown framework is presented. In this model of study, competitive advantage is considered as the dependent variable while information sharing, customer relationships. Partnerships with suppliers are taken as the independent variables in present research study. Supply chain flexibility is taken as the mediator variable between independent and dependent relationships.

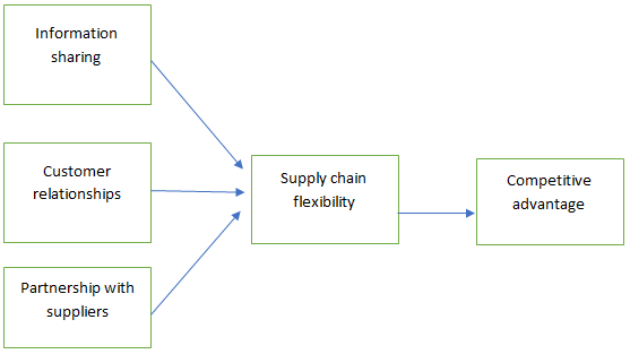

Figure 1. Framework of research

3. Methodology

For this study, the best option is the technique of latent analysis because the purpose of study is the examination of relation among the latent variables.

According to the studies, using the SEM technique, there should be a normal distribution of data. So, this study has used PLS-SEM technique because this technique does not require the normally distributed dataset. According to [26] among the other statistical programs the best alternative of SEM is PLS-SEM just as AMOS and LISREL.

For the complexed models which have hierarchical constructs with moderating and mediating effects, the most suitable technique is PLS path modelling. At early stages of theoretical development for the assessment and validation of exploratory models, we have to employ the PLS modelling. Additionally, it helps the researcher in explaining the endogenous construct. The sensitivity of multicollinearity is one of the unique features of PLS.

Additionally, by using the multiple regression PLS determine the structural and measurement models, which may weak with multicollinearity issue [27].

Finally, we can also use PLS in formative and reflective measurement models. We have also tested these assumptions by using SPSS before choosing the analysis technique. In social research and in general research, there are three steps in phase of data analysis. In 1st step for analysis we clean and organize the data, description of data is 2nd step whereas the third step is known as inferential statistics which includes hypothesis testing of models. Checking the accuracy of data involved in preparation phase. On the other side we have used descriptive statistics for describing the main features of data, which will provide basic summary regarding sample and variables of study.

4. Results

For describing the variables and for the data analysis and examination of the relation between different variables we have used two different types inferential and descriptive techniques. For describing the data, we have used SPSS whereas for testing the relation between variables we have used Partial Least Squares Structural Equation Modelling (PLS-SEM). Firstly, for the assessment of outer model or measurement model were used before testing the hypothesis of this study. For checking the goodness of fit we have followed the two steps 1) construct validity which includes convergence validity, Cronbach's alpha, composite reliability and factor loadings. 2) Discriminant validity which included [28] criterion. The structural dimensions of model are shown in Figure 1. the consistency of measures was represented by the reliability constructs.

The confirmation of the reliability of its indicators is the main criteria of convergent validity. In the current study the minimum value for the slandered loadings is 0.6,

which is significant as per the available literature for instance [29]. According to the studies, the degree at which the measurement of construct can properly measure the concept which they were designed to measure is known as construct validity.

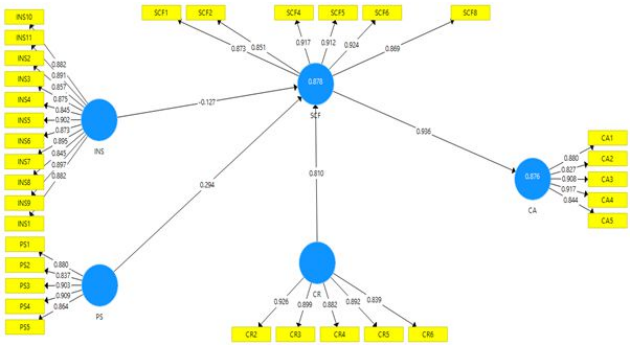

Figure 2. Measurement Model

Table 1. Outer Loadings

	CA	CR	INS	PS	SCF
CA1	0.88				
CA2	0.827				
CA3	0.908				
CA4	0.917				
CA5	0.844				
CR2		0.926			
CR3		0.899			
CR4		0.882			
CR5		0.892			
CR6		0.839			
INS10			0.882		
INS11			0.891		
INS2			0.857		
INS3			0.875		
INS4			0.845		
INS5			0.902		
INS6			0.873		
INS7			0.895		
INS8			0.845		
INS9			0.897		
PS1				0.88	
PS2				0.837	
PS3				0.903	
PS4				0.909	
PS5				0.864	
SCF1					0.873
SCF2					0.851
SCF4					0.917
SCF5					0.912
SCF6					0.924
SCF8					0.869
INS1			0.882		

For the evaluation of convergent validity, this study has used Average Variance Extracted (AVE) based on the [30] criteria. The value of AVE in terms of convergent validity shows suitable results as the threshold for all the constructs is minimum 0.5. The range of AVE value is 0.514- 0.906.

According to the [30], the recommended value for the composite reliability is 0.7. the value of AVE has exceeded from the recommended range which indicates a good degree of construct validity. These outcomes show the outer model's convergent validity. We have employed the method for the confirmation of discriminant validity of measures.

Table 2. Reliability

	Cronbach's Alpha	rho_A	CR	(AVE)
CA	0.924	0.926	0.943	0.767
CR	0.933	0.934	0.949	0.789
INS	0.970	0.971	0.973	0.769
PS	0.926	0.928	0.944	0.773
SCF	0.948	0.949	0.959	0.795

As shown in Table 3, the square root of AVE for constructs was placed diagonally in the matrix of correlation. If the diagonal row of element is higher than the other element of column and row it provides the

Table 3. Validity

	CA	CR	INS	PS	SCF
CA	0.896				
CR	0.885	0.888			
INS	0.699	0.790	0.877		
PS	0.725	0.696	0.838	0.879	
SCF	0.836	0.727	0.708	0.739	0.892

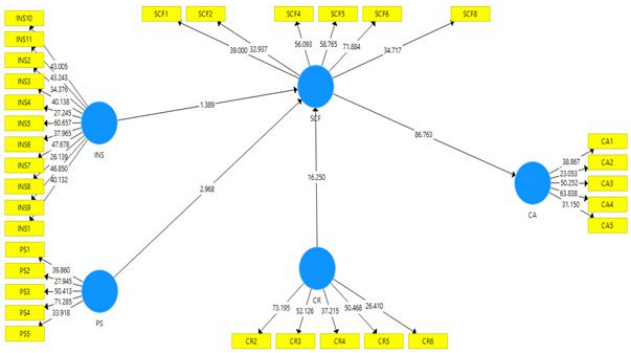

Figure 3. Structural Model

confirmation of discriminant validity of the outer model, because it was expected that the results of hypothesis testing must be reliable and valid. The coefficient has explained the model's reflective accuracy.

Table 4. Direct Relationship

	(O)	(M)	(STDEV)	(|O/STDEV|)	P Values
CR -> CA	0.758	0.752	0.049	15.370	**0.000**
CR -> SCF	0.810	0.803	0.050	16.250	**0.000**
INS -> CA	-0.119	-0.114	0.086	1.387	**0.083**
INS -> SCF	-0.127	-0.122	0.091	1.389	**0.082**
PS -> CA	0.275	0.278	0.093	2.969	**0.001**
PS -> SCF	0.294	0.297	0.099	2.968	**0.002**
SCF -> CA	0.936	0.936	0.011	86.763	**0.000**

Table 5. Mediation

	(O)	(M)	(STDEV)	(|O/STDEV|)	P Values
CR -> SCF -> CA	0.758	0.752	0.049	15.370	**0.000**
INS -> SCF -> CA	-0.119	-0.114	0.086	1.387	**0.083**
PS -> SCF -> CA	0.275	0.278	0.093	2.969	**0.001**

The coefficient explains the reflective accuracy of the model. It is determined by taking the square of correlation among the predicted endogenous construct values and actual endogenous construct values. As per the study of [32], the coefficient reflects the combined effect of exogenous latent constructs on the model' endogenous latent constructs. The range of coefficient of determination is 0-1, where higher R2 value, i.e. closer to 1 value, shows higher predictive accuracy.

Table 6. R-square

	R Square
CA	0.876
SCF	0.878

Researchers proposed no rule of thumb for R2 value. However, R2=0.75 suggest substantial prediction, R2=0.50 suggest moderate prediction, and R2=0.25 suggest weak prediction [31]. Therefore, more paths for targeted construct, the greater the R2 value of the targeted construct. Majority of the researchers while conducting a study looks for the parsimonious model, i.e. model which can well explain the data using fewer independent variables.

5. Conclusion

In this era, organizations are facing intense competition due to which it is very important for them to develop a competitive advantage. The demands of the customers are increasing in which they demand the product with a number of varieties in short period of time with less cost. In this scenario, organizations must focus on their supply chain. For this reason, present study was conducted to examine the impact of supplier partnership, information sharing and customer relationship on the competitive advantage.

For the accommodation of various production volumes, the association between buyer and seller need to be overlooked and improved. The quality of the product being produced also depends upon the relationship with the suppliers and the reach of product to the target customer heavily depend on making good relationship with the customers.

If buyer-supplier relation is flexible, and collaborative, with sharing of information properly, definitely lead to improved competitive advantage in the market.

The data was collected from the respondents of rubber industry firms based in Indonesia. To analyze the data, testing the relation between variables we have used Partial Least Squares Structural Equation Modelling (PLS-SEM). The results of the findings justify the presented framework.

The findings of the study revealed that there exists a significant relationship among the mentioned variables except the relationship of information sharing with flexibility and competitive advantage. Same is the mediating result of flexibility between information sharing and competitive advantage. It means the policy makers of the rubber industry should focus developing the partnership with suppliers and developing relationships with customers to develop and sustain competitive advantage. Moreover, to sustain in the market on the long run basis and to enjoy the increased revenue, the organizations must adopt flexibility in their supply chain practices as well. The findings of the study are helpful for the policy makers of the rubber industry based in Indonesia. Therefore, it is concluded that if the organizations deal with the challenges that are present in terms of supply chain efficiency, it is ultimate to reach competitive advantage.

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